



THOMAS G. NEWMAN, Editor.

Vol. XXIII. June 15, 1887. No. 24.



Soon will the festive bumble-bee
His little carol sing,
And polish up right carefully
His merry little sting.

Soon will the small boy seek the wood
To climb his favorite tree,
And in a happy, careless mood
Pursue that self-same bee.

Then will that blithesome bee in turn
Cause that same boy to scud
To where he can relieve the burn
By plastering with mud.

—Selected.

A Distinguished Visitor.—The Canadian Honey-Producer for June is just received, and in it we find the following item of news:

We are pleased to inform our readers that Mr. T. W. Cowan, F.G.S., F.R.M.S., editor of the *British Bee Journal*, and a prominent writer and British bee-keeper, also President of the British Bee-Keepers' Association, which has a membership of over 10,000, expects to visit Brantford this summer, where he will lecture on bee-keeping. This will be an event of interest to all, and the bee-keepers of Brantford will make effort to make Mr. Cowan's visit a pleasant one to him, to show in a small measure their appreciation of his kindness.

We had the pleasure of making Mr. Cowan's acquaintance some years ago, and we congratulate our Brantford friends upon the promise of a visit from such a genial gentleman and enthusiastic apiarist.

Hiving Swarms on Starters in Frames.—Mr. S. Cornell, in the *American Apiculturist* for June, says that he lost considerable by so doing a few years ago. He adds:

The results were that I had brood and pollen in the sections, and one-third drone-comb in the brood-nests (which consisted of only 4 frames of 160 square inches each), besides being annoyed by the swarms repeatedly swarming out.

If bees cluster outside of the hives they need ventilation or more room.

The grand essentials of Happiness are—something to do, something to love, and something to hope for.

Kissing Bees.—On page 250 we criticised an item "going the rounds of the press," stating that Mrs. Thomas, a Pennsylvania lady, readily sold all her comb honey "at 50 cents per pound," even in 8 and 10 pound boxes; that she obtained a profit of \$30 per colony; that her bees knew her, and often "kissed" her hand, etc. We concluded the criticism in these words:

This rosy account is being extensively copied into the papers, and will, no doubt, induce many to embark in the business only to become disgusted when they find that the price of honey is less than one-fourth of that quoted above; and much of the rosy speech at the convention proves to be but a "delusion and a snare!"

This displeased the *Bee-Keepers' Magazine*, which enviously remarked thus in the June issue, which is just received:

Mrs. Thomas is absolutely truthful, and a most successful apiarist. Every word she said at that convention was the truth, and we think Mr. Newman had better seek some other quarter into which to overturn his vial of sarcasm.

We objected to the extravagant and rosy remarks, because of their deceptiveness in inducing persons to keep bees upon the representation that they could sell their honey at 50 cents per pound, and make a profit of \$30 on each colony; and then to become disgusted and injure the pursuit. We think bee-keepers generally will view it in the same light—the *Magazine* to the contrary notwithstanding!

But the next sentence caps the climax! It reads thus:

The great trouble, we suppose, lies in the fact that her remarks tended to show what you can do in a home market, and does not help along that great (?) convention which is being talked of.

This sentence exhibits deplorable ignorance or absurd jealousy—or both.

Her remarks do not "show what you can do in a home market"—for in no home market in North America can any one obtain 50 cents per pound for comb honey!

The idea is preposterous that any such remarks could affect the "great (?) convention"—either to help it or hinder it! And neither will any such jealous allusions have any effect.

The *Bee-Keepers' Magazine* would do much better to labor for the general good of the pursuit, and encourage harmonious and united action among apiarists everywhere. In such it will always find a co-worker in the *AMERICAN BEE JOURNAL*.

When to Put on Sections.—This question is asked quite often, and here is an answer by Mr. F. L. Dougherty from the *Indiana Farmer*:

Sections should not go on the hives until about the time the bees are ready to enter them, but as that time depends entirely on the condition of the colony and the honey flow, there can be no set time for putting them in place. The bees will seldom commence in sections so long as there are unfilled combs below; and where colonies are not sufficiently strong to occupy the sections at the beginning of the honey flow, all surplus comb should be removed from below to induce them to enter the sections. The combs removed can be given back to them for breeding, the extra space in the brood-chamber, in the mean time, being occupied by a division-board. Too much room should not be given at first in the sections, as it is much more detrimental than many suppose. Besides, they will commence much more readily when not allowed too much space.

Ants in the Apiary.—W. S. McCrum, Elmhurst, Ind., makes the following inquiries about ants in the apiary:

I am troubled by small ants collecting over the top of the covering of my hives. How can I exterminate them? Are they any detriment? My bees all wintered well on the summer stands, and are doing well since the rains. It was very dry here during all the spring until about two weeks ago. I never heard roaring in cold weather.

Ants are no particular detriment to bees, and only weak colonies will tolerate them. Strong colonies will drive them away. To sprinkle powdered borax about their hills will drive them away very quickly.

One method of exterminating them is described by "one who knows" thus:

When you find them on your premises, get ready tea-kettles of boiling water, plenty of it. Scald every little hole you see with a mound of little earth pellets around it; it is the home of the ant. On a sunny day these pellets are brought out of the nests to dry. When the weather is damp, or soon will be, you will see nothing but little holes in the ground. The ants are all "at home." Scald them. If your cellar is not cemented, hunt the pest there; very likely you will find lots of them. When the work here recommended has been done, clean out your closets, sugar pans, everything in the closets; rub fine salt on the shelves, lay clean yellow paper on them, and put back the dishes. In the cracks of the floor and around the surface of the closets should be placed ground red pepper. Ants will not come again for a long time.

A Revised Version.—Little girl studying Sunday-school lesson (third chapter of Matthew)—"Uncle Henry, what did John wear a leathern griddle for?" Uncle Henry—"A leathern griddle! Why, what do you mean?" "Why, it says here, 'And the same John had his raiment of camel's hair and a leathern griddle about his loins, and his meat was locusts and wild honey.' Oh! I see! to cook his locusts on." And away she fled.

Bees in a Wall of Stone.—The London *Standard* relates the following incident in the county of Surry:

For the last 16 or 18 years a colony of bees has taken possession of a niche between the walls of the Hautboy and Fiddle public house at Ockham, near Ripley. The outer walls of the building are about 3 feet in thickness, and the bees made choice of their store-house at the very top of the building, which is three stories high.

The landlord and landlady, with their daughters, resolved this year upon finding out the exact whereabouts of the colony. A diligent search was made one morning under the roof of the house, and a piece of comb was found immediately below the slates, but in such a position that it could not be reached. Mr. Smith, the landlord, then descended to the bedroom, and, with chisel and hammer, removed a number of bricks from the wall, where the nest was found.

More than two feet square of the wall had to be removed, when a wonderful sight presented itself—a large mass of comb, about two feet in thickness, filled with honey, was exposed. The bees were fumigated, after which large pieces of honey were cut out, until dish after dish was filled with a total quantity of about 120 pounds. The bricks have not been put into the wall again, but a glass door has been inserted, so that any one interested in bee culture may have an opportunity of seeing them.

The Hand-Stamp Catalogue of G. W. Bercaw & Bro., Fostoria, O., is on our desk. It contains 16 pages.

QUERIES

With Replies thereto.

[It is quite useless to ask for answers to Queries in this Department in less time than one month. They have to wait their turn, be put in type, and sent in about a dozen at a time to each of those who answer them; get them returned, and then find space for them in the JOURNAL. If you are in a "hurry" for replies, do not ask for them to be inserted here.—Ed.]

Filling Sections with Store Combs.

Query 430.—When a strong colony of bees, successfully at work in surplus cases, has swarmed, and the swarm has been hived on 8 frames with half-inch starters of foundation in them, capped with the surplus cases from the parent hive, and when the brood-nest is say half full of worker-comb and brood, and when the remaining half of the brood-nest has been filled with store combs, will it prove profitable to the honey-producer to prune off these store combs, extract what honey may be in them, and use them to fill the sections with? A 24-pound case may be filled in this way. Will it pay?—M. E., Iowa.

I do not believe it would pay.—C. C. MILLER.

Those combs will do, if no brood has been reared in them.—DADANT & SON.

With my system of work it would not pay me. I could use the combs to better advantage.—H. D. CUTTING.

Why not make the bees build the comb in the sections in the first place? I get just as much comb in sections as in frames in the brood-nest.—C. W. DAYTON.

It will hardly pay. Use 5 frames, and get them filled with worker comb, using foundation in the sections.—G. M. DOOLITTLE.

I have never tried this, but those who have say it is profitable. See page 40 of "The Production of Comb Honey."—W. Z. HUTCHINSON.

Yes, if the comb is clean and bright, and you can induce the bees to re-build with worker comb.—JAMES HEDDON.

I have often used bright store-comb in this way to great advantage. It induces the bees to go into the sections quickly. I think it will pay.—A. J. COOK.

It would not with myself. Want of knowledge as to location and floral surroundings prevents me from giving any further answer.—J. E. POND.

It would not be profitable to me to manage my bees in that way. But if I had the clean, white drone or store combs I would use them in the sections. I know it will pay, for I have tried it.—G. W. DEMAREE.

I have never tried it, but on a large scale I do not think it would pay. It would be better to have all swarms into brood-cases not larger than will contain 800 square inches of comb, and you will not have enough drone comb built from starters in the brood-frames to be objectionable. But the contraction system requires the use of a queen-excluding honey-board. My brood-case for swarms contains

750 square inches of comb-surface, and appears to be about right in working for comb honey.—G. L. TINKER.

The querist here, no doubt, has "store comb" mixed with drone comb. If he means the latter, it will pay to cut it out and place it in the sections. "Store comb" (cells with no mathematical precision as to size) is usually constructed at the top of the frame, and not below.—J. P. H. BROWN.

Many who have pursued this plan still advocate it, and emphatically state that it pays.—THE EDITOR.

Italianizing Colonies.

Query 431.—1. At what time of the year is it best to Italianize an apiary? 2. What method would you advise a beginner to adopt?—G., Iowa.

1. When you can do it best. 2. Post up by reading the bee-books.—G. M. DOOLITTLE.

The bee-books will advise as to this.—C. C. MILLER.

Italianize in May and June. Buy a first-class queen or two, and breed from such.—DADANT & SON.

This question involves too long an answer for this department.—JAMES HEDDON.

Toward the close of the honey harvest. Circumstances would dictate the method.—C. W. DAYTON.

I prefer the fall, and would advise a beginner to buy queens and introduce them.—W. Z. HUTCHINSON.

1. All through the season. 2. The one described in all the books. Rear good Italian queens and supersede old queens by them.—A. J. COOK.

Either before the appearance of black drones, or after the swarming season is over, and all the impure drones are destroyed. Give queen-cells or laying queens. You can keep Italian drones a long while in a queenless colony.—J. P. H. BROWN.

1. Just at the close of the honey harvest. 2. It will take too much space to give an answer that would be of practical value.—J. E. POND.

I change my queens just at the close of the early honey harvest. Perhaps the simplest way is to rear some queen-cells in advance, and at the close of the honey harvest remove the black queens and give each colony a queen-cell two or three days after the queens are removed.—G. W. DEMAREE.

It would depend upon circumstances very much. You do not say how many colonies you have. This space is too small to give any practical method. Get some good work on the management of bees; read it carefully, and use good common-sense, and you will succeed.—H. D. CUTTING.

There is but one easy and sure method every time to Italianize any colony, and it may be done at any time. Take out the queens of the colonies to be superseded, and in nine days cut out all the queen-cells. Then

the colony is ready to receive any queen after caging, or the drones are all killed, and there is a colony with Italian drones. A piece of comb containing just hatching-brood may be introduced. The bees will then rear their own queen. This is the best way to supersede cross colonies, unless you know how to transfer the larvae from the queen-cells.—G. L. TINKER.

1. Italianize your bees either in the spring or autumn, as it may best suit your convenience. 2. Purchase of some reliable breeder one or more tested Italian queens, and introduce them according to the method described in your bee-book. In rearing queens, be careful to destroy all the drones from the native colonies, so that the young queens may be purely mated.—THE EDITOR.

Uniting Colonies in the Spring.

Query 432.—Is it profitable to double up colonies in the spring? If so, at what time and to what extent should it be done?—Kroy, Ills.

No, not in our opinion, unless the colonies are queenless.—DADANT & SON.

I find it profitable about the middle of June; i. e., weak colonies. There is no object in doubling up strong ones.—G. M. DOOLITTLE.

It does not pay me to do it. Were I going to unite colonies in the spring, I would unite them about two weeks before the white clover harvest begins.—G. W. DEMAREE.

Not unless they are queenless. In this case they should be united as soon as we find out their condition.—A. J. COOK.

No, not as a rule. Never double up colonies that are capable of building up singly, if to do so takes all summer.—JAMES HEDDON.

I do not think it will pay. If they have a queen, crowd up to small space, and confine all the heat possible. A small colony in the spring, with proper care, will make a good colony.—H. D. CUTTING.

It depends upon the situation of the bee-keeper. I double up such colonies in the spring; but if the queens are valuable, I do not do it until I can make some disposition of them. It always pays best to have no weak colonies, if it can be avoided.—J. P. H. BROWN.

Possibly it is, especially if comb honey is to be produced. It should be done just before the main honey harvest, and to such an extent that all the combs in the united colony will be well filled with brood.—W. Z. HUTCHINSON.

I do not consider it profitable. I prefer to build up weak colonies by drawing frames from which the young bees are emerging from strong colonies.—J. E. POND.

No, it is not. But it often is profitable to strengthen weak colonies by shaking down young bees, taken from strong colonies, in front of the

weak ones. I do it by placing a sheet in front of the weak colony, and then take a comb with the bees from a strong colony, being careful not to take out the queen, and shake them off on the sheet. The young bees will run into the hive, and will aid materially to build up the colony. The proceeding is always safe to the queen of the weak colony.—G. L. TINKER.

If a colony is queenless, to unite it to a weak colony with a good queen is desirable. Sometimes it is good policy to unite two weak colonies when each have queens, just before the white clover blooms, especially if the production of comb honey is the object.—THE EDITOR.

Correspondence.

This mark \odot indicates that the apiarist is located near the center of the State named; \odot north of the center; \odot south; \odot east; \odot west; and this \odot northeast; \odot northwest; \odot southeast; and \odot southwest of the center of the State mentioned.

For the American Bee Journal.

Our Varied Climate, etc.

G. M. DOOLITTLE.

I do not think I have ever been so impressed with the vastness of this country of ours as I have the past spring. Especially was this forcibly brought to mind in reading page 307 of this paper, where the editor says: "The losses (in bees) have been very light, both in winter and spring, and if the weather continues favorable, a good crop of honey may be expected." Now while I do not doubt that the editor was correct regarding his locality, and the larger part of all the States west of New York, yet in this locality, Pennsylvania and the Eastern States, our loss has been quite severe, nearly equalling any we have ever sustained, and what colonies did survive are generally weak.

Any reader of the above extract, who did not take any other bee-paper than the AMERICAN BEE JOURNAL, nor had any correspondence outside of his own neighborhood, would suppose that there might be "no end" to bees and honey the present season; but taking several papers, or being in a position to receive communications from all over the United States and Canada, there is no cause for alarm along this line.

On the same day that I read the above quotation, the following was noticed in the *Bee-Keepers' Advance* for May, which I quote so the reader can see that something more than his immediate surroundings governs the matter of loss, or no loss, as well as an over or under production of honey. The *Advance* says:

"The past winter, if it can be said to be past, was the hardest on bees for many years. A continuous cold

winter, with little or no opportunity for bees to get a flight for the entire winter, and the result is that fully two-thirds of the bees in this region, wintered on their summer stands, have died." And yet while this was being written, bees were booming and having a lovely time in the Western States! Why the difference? It is all answered in the words, "no opportunity to get a flight," and "frequent flights" during the winter.

As I read through the reports on wintering bees from Illinois, Indiana, Ohio, Michigan, and other States of the West, saying "bees had a splendid flight to-day," or "a day or two ago" along in January, February and March, I said that bees in those States will winter well; and when I got reports from States here at the East, saying "no flight for five months," it was easy to predict the result.

The question regarding the wintering of bees is not in diarrhea or no diarrhea, but in frequent flights or no flight; or at least so it seemed to me more than ten years ago; and with every succeeding winter that idea is strengthened. It now looks as though we of the North have only one desideratum, and that is cellar-wintering. With a cellar of the proper temperature, bees can endure six months of confinement better than they can four months out-doors, I care not how well packed. My bees were confined in the cellar for 181 days, yet all came out in good condition except one which starved; while my loss among those wintered on the summer stands, which were confined 151 days, was fully 25 per cent.

LOCALITY AND POPULOUSNESS OF COLONIES.

While on this subject of diversity of country, I wish to speak regarding something which causes many words and often hard feelings. It is about the ordering of bees and queens from a cold and unpromising place, to be sent early in the season to a warmer and more genial locality, the party ordering making no allowance for the difference of latitude. A party in any of the Southern States should not expect a colony of bees shipped from New York or Michigan during the month of May, to be equal in brood and bees to one bought in his own locality; yet there are apparently very many who think this should be the case. It seems to me that common-sense should teach any one better. Only a few days ago I got a letter from a Southern party, using very bitter words regarding one of our most respected apiarists, claiming that he ordered full colonies and received only what ought to be termed nuclei in return. A little correspondence regarding the matter showed that the apiarist had sent out all of his strongest colonies and kept all the weaklings to build up for his own use, yet was being censured for being more than generous.

If large numbers of bees are wanted early in the season, order of parties in a more Southern latitude. If improvement of stock is what is wanted,

order of parties North, expecting nothing great unless you are willing to wait until July.

MISTAKES IN ORDERING QUEENS.

Now about ordering queens: Many seem to suppose that where a person has a yearly advertisement in a paper quoting prices for queens, that queens can be had at any time of the year. It is nothing uncommon for such a queen-breeder to get an order while the snow is on the ground, saying, "Enclosed find \$1 for an untested queen, which you will please send by return mail, as I want her immediately." Such persons do not stop to think that they could not possibly get untested queens (no not even the queen-cells which would prove of any value) thus early in the season. Then when the party of whom the queens are ordered, writes a kind letter explaining the matter, he will often get curses, the letter winding up by saying, "Send my money back at once;" or, "it is early queens I want."

How much better it would have been for all concerned, if such parties would stop and reason a little, which would of necessity lead them to know that what they could not do, the breeder could not; and the result would be, if early queens must be had, they should send to the South for them. Then again, the originator of the "dollar queen" business keeps, or has kept, as a standing advertisement in his paper for years, that no such queens will probably be sent out before July; yet hundreds of bee-keepers seem to expect "dollar queens" by return mail during the month of May!

But those ordering queens are not wholly to blame for this state of affairs. In the May issue of a certain bee-paper I saw it stated by a noted queen-breeder, that after the first of May he would be able to send out 100 untested queens a week, his facilities for sending out increasing with each week. As this breeder lives in about my latitude, I wondered how this could be done; but now the matter is plain, as the June number of that paper has arrived, and in it I find that owing to unfavorable weather and circumstances, expectations have not been realized, but it is hoped that he will soon be able to fill all orders!

Brethren, on both sides of the house, "these things ought not so to be." We cannot afford to have our dispositions soured and our lives made miserable by misrepresentation or unreasonableness. To do away with this state of affairs, would it not be well for the purchaser to drop a postal card to the breeder, asking him to fix a date when he could fill an order, then if the agreement was not lived up to, the breeder could be avoided in the future? A standing advertisement is no certain criterion to follow.

Borodino, \odot N. Y.

[Our remarks about the losses in winter and spring were intended to apply in general—in the broad expanse of territory of North America.

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This mark © indicates that the apiarist is located near the center of the State named; ♂ north of the center; ♀ south; ♂ east; ♀ west; and this ♂ northeast; ♀ northwest; ♂ southeast; and ♀ southwest of the center of the State mentioned.

For the American Bee Journal.

Our Varied Climate, etc.

G. M. DOOLITTLE.

I do not think I have ever been so impressed with the vastness of this country of ours as I have the past spring. Especially was this forcibly brought to mind in reading page 307 of this paper, where the editor says: "The losses (in bees) have been very light, both in winter and spring, and if the weather continues favorable, a good crop of honey may be expected." Now while I do not doubt that the editor was correct regarding his locality, and the larger part of all the States west of New York, yet in this locality, Pennsylvania and the Eastern States, our loss has been quite severe, nearly equalling any we have ever sustained, and what colonies did survive are generally weak.

Any reader of the above extract, who did not take any other bee-paper than the AMERICAN BEE JOURNAL, nor had any correspondence outside of his own neighborhood, would suppose that there might be "no end" to bees and honey the present season; but taking several papers, or being in a position to receive communications from all over the United States and Canada, there is no cause for alarm along this line.

On the same day that I read the above quotation, the following was noticed in the *Bee-Keepers' Advance* for May, which I quote so the reader can see that something more than his immediate surroundings governs the matter of loss, or no loss, as well as an over or under production of honey. The *Advance* says:

"The past winter, if it can be said to be past, was the hardest on bees for many years. A continuous cold

winter, with little or no opportunity for bees to get a flight for the entire winter, and the result is that fully two-thirds of the bees in this region, wintered on their summer stands, have died." And yet while this was being written, bees were booming and having a lovely time in the Western States! Why the difference? It is all answered in the words, "no opportunity to get a flight," and "frequent flights" during the winter.

As I read through the reports on wintering bees from Illinois, Indiana, Ohio, Michigan, and other States of the West, saying "bees had a splendid flight to-day," or "a day or two ago" along in January, February and March, I said that bees in those States will winter well; and when I got reports from States here at the East, saying "no flight for five months," it was easy to predict the result.

The question regarding the wintering of bees is not in diarrhea or no diarrhea, but in frequent flights or no flight; or at least so it seemed to me more than ten years ago; and with every succeeding winter that idea is strengthened. It now looks as though we of the North have only one desideratum, and that is cellar-wintering. With a cellar of the proper temperature, bees can endure six months of confinement better than they can four months out-doors, I care not how well packed. My bees were confined in the cellar for 181 days, yet all came out in good condition except one which starved; while my loss among those wintered on the summer stands, which were confined 151 days, was fully 25 per cent.

LOCALITY AND POPULOUSNESS OF COLONIES.

While on this subject of diversity of country, I wish to speak regarding something which causes many words and often hard feelings. It is about the ordering of bees and queens from a cold and unpromising place, to be sent early in the season to a warmer and more genial locality, the party ordering making no allowance for the difference of latitude. A party in any of the Southern States should not expect a colony of bees shipped from New York or Michigan during the month of May, to be equal in brood and bees to one bought in his own locality; yet there are apparently very many who think this should be the case. It seems to me that common-sense should teach any one better. Only a few days ago I got a letter from a Southern party, using very bitter words regarding one of our most respected apiarists, claiming that he ordered full colonies and received only what ought to be termed nuclei in return. A little correspondence regarding the matter showed that the apiarist had sent out all of his strongest colonies and kept all the weaklings to build up for his own use, yet was being censured for being more than generous.

If large numbers of bees are wanted early in the season, order of parties in a more Southern latitude. If improvement of stock is what is wanted,

order of parties North, expecting nothing great unless you are willing to wait until July.

MISTAKES IN ORDERING QUEENS.

Now about ordering queens: Many seem to suppose that where a person has a yearly advertisement in a paper quoting prices for queens, that queens can be had at any time of the year. It is nothing uncommon for such a queen-breeder to get an order while the snow is on the ground, saying, "Enclosed find \$1 for an untested queen, which you will please send by return mail, as I want her immediately." Such persons do not stop to think that they could not possibly get untested queens (no not even the queen-cells which would prove of any value) thus early in the season. Then when the party of whom the queens are ordered, writes a kind letter explaining the matter, he will often get curses, the letter winding up by saying, "Send my money back at once;" or, "it is early queens I want."

How much better it would have been for all concerned, if such parties would stop and reason a little, which would of necessity lead them to know that what they could not do, the breeder could not; and the result would be, if early queens must be had, they should send to the South for them. Then again, the originator of the "dollar queen" business keeps, or has kept, as a standing advertisement in his paper for years, that no such queens will probably be sent out before July; yet hundreds of bee-keepers seem to expect "dollar queens" by return mail during the month of May!

But those ordering queens are not wholly to blame for this state of affairs. In the May issue of a certain bee-paper I saw it stated by a noted queen-breeder, that after the first of May he would be able to send out 100 untested queens a week, his facilities for sending out increasing with each week. As this breeder lives in about my latitude, I wondered how this could be done; but now the matter is plain, as the June number of that paper has arrived, and in it I find that owing to unfavorable weather and circumstances, expectations have not been realized, but it is hoped that he will soon be able to fill all orders!

Brethren, on both sides of the house, "these things ought not so to be." We cannot afford to have our dispositions soured and our lives made miserable by misrepresentation or unreasonableness. To do away with this state of affairs, would it not be well for the purchaser to drop a postal card to the breeder, asking him to fix a date when he could fill an order, then if the agreement was not lived up to, the breeder could be avoided in the future? A standing advertisement is no certain criterion to follow.

Borodino, © N. Y.

[Our remarks about the losses in winter and spring were intended to apply in general—in the broad expanse of territory of North America.

QUERIES

With Replies thereto.

[It is quite useless to ask for answers to Queries in this Department in less time than one month. They have to wait their turn, be put in type, and sent in about a dozen at a time to each of those who answer them; get them returned, and then find space for them in the JOURNAL. If you are in a "hurry" for replies, do not ask for them to be inserted here.—ED.]

Filling Sections with Store Combs.

Query 430.—When a strong colony of bees, successfully at work in surplus cases, has swarmed, and the swarm has been hived on 8 frames with half-inch starters of foundation in them, capped with the surplus cases from the parent hive, and when the brood-nest is say half full of worker-comb and brood, and when the remaining half of the brood-nest has been filled with store combs, will it prove profitable to the honey-producer to prune off these store combs, extract what honey may be in them, and use them to fill the sections with? A 24-pound case may be filled in this way. Will it pay?—M. S., Iowa.

I do not believe it would pay.—C. C. MILLER.

Those combs will do, if no brood has been reared in them.—DADANT & SON.

With my system of work it would not pay me. I could use the combs to better advantage.—H. D. CUTTING.

Why not make the bees build the comb in the sections in the first place? I get just as much comb in sections as in frames in the brood-nest.—C. W. DAYTON.

It will hardly pay. Use 5 frames, and get them filled with worker comb, using foundation in the sections.—G. M. DOOLITTLE.

I have never tried this, but those who have say it is profitable. See page 40 of "The Production of Comb Honey."—W. Z. HUTCHINSON.

Yes, if the comb is clean and bright, and you can induce the bees to rebuild with worker comb.—JAMES HEDDON.

I have often used bright store-comb in this way to great advantage. It induces the bees to go into the sections quickly. I think it will pay.—A. J. COOK.

It would not with myself. Want of knowledge as to location and floral surroundings prevents me from giving any further answer.—J. E. POND.

It would not be profitable to me to manage my bees in that way. But if I had the clean, white drone or store combs I would use them in the sections. I know it will pay, for I have tried it.—G. W. DEMAREE.

I have never tried it, but on a large scale I do not think it would pay. It would be better to have all swarms into brood-cases not larger than will contain 800 square inches of comb, and you will not have enough drone comb built from starters in the brood-frames to be objectionable. But the contraction system requires the use of a queen-excluding honey-board. My brood-case for swarms contains

750 square inches of comb-surface, and appears to be about right in working for comb honey.—G. L. TINKER.

The querist here, no doubt, has "store comb" mixed with drone comb. If he means the latter, it will pay to cut it out and place it in the sections. "Store comb" (cells with no mathematical precision as to size) is usually constructed at the top of the frame, and not below.—J. P. H. BROWN.

Many who have pursued this plan still advocate it, and emphatically state that it pays.—THE EDITOR.

Italianizing Colonies.

Query 431.—1. At what time of the year is it best to Italianize an apiary? 2. What method would you advise a beginner to adopt?—G., Iowa.

1. When you can do it best. 2. Post up by reading the bee-books.—G. M. DOOLITTLE.

The bee-books will advise as to this.—C. C. MILLER.

Italianize in May and June. Buy a first-class queen or two, and breed from such.—DADANT & SON.

This question involves too long an answer for this department.—JAMES HEDDON.

Toward the close of the honey harvest. Circumstances would dictate the method.—C. W. DAYTON.

I prefer the fall, and would advise a beginner to buy queens and introduce them.—W. Z. HUTCHINSON.

1. All through the season. 2. The one described in all the books. Rear good Italian queens and supersede old queens by them.—A. J. COOK.

Either before the appearance of black drones, or after the swarming season is over, and all the impure drones are destroyed. Give queen-cells or laying queens. You can keep Italian drones a long while in a queenless colony.—J. P. H. BROWN.

1. Just at the close of the honey harvest. 2. It will take too much space to give an answer that would be of practical value.—J. E. POND.

I change my queens just at the close of the early honey harvest. Perhaps the simplest way is to rear some queen-cells in advance, and at the close of the honey harvest remove the black queens and give each colony a queen-cell two or three days after the queens are removed.—G. W. DEMAREE.

It would depend upon circumstances very much. You do not say how many colonies you have. This space is too small to give any practical method. Get some good work on the management of bees; read it carefully, and use good common-sense, and you will succeed.—H. D. CUTTING.

There is but one easy and sure method every time to Italianize any colony, and it may be done at any time. Take out the queens of the colonies to be superseded, and in nine days cut out all the queen-cells. Then

the colony is ready to receive any queen after caging, or the drones are all killed, and there is a colony with Italian drones. A piece of comb containing just hatching-brood may be introduced. The bees will then rear their own queen. This is the best way to supersede cross colonies, unless you know how to transfer the larvae from the queen-cells.—G. L. TINKER.

1. Italianize your bees either in the spring or autumn, as it may best suit your convenience. 2. Purchase of some reliable breeder one or more tested Italian queens, and introduce them according to the method described in your bee-book. In rearing queens, be careful to destroy all the drones from the native colonies, so that the young queens may be purely mated.—THE EDITOR.

Uniting Colonies in the Spring.

Query 432.—Is it profitable to double up colonies in the spring? If so, at what time and to what extent should it be done?—Kroy, Ills.

No, not in our opinion, unless the colonies are queenless.—DADANT & SON.

I find it profitable about the middle of June; i. e., weak colonies. There is no object in doubling up strong ones.—G. M. DOOLITTLE.

It does not pay me to do it. Were I going to unite colonies in the spring, I would unite them about two weeks before the white clover harvest begins.—G. W. DEMAREE.

Not unless they are queenless. In this case they should be united as soon as we find out their condition.—A. J. COOK.

No, not as a rule. Never double up colonies that are capable of building up singly, if to do so takes all summer.—JAMES HEDDON.

I do not think it will pay. If they have a queen, crowd up to small space, and confine all the heat possible. A small colony in the spring, with proper care, will make a good colony.—H. D. CUTTING.

It depends upon the situation of the bee-keeper. I double up such colonies in the spring; but if the queens are valuable, I do not do it until I can make some disposition of them. It always pays best to have no weak colonies, if it can be avoided.—J. P. H. BROWN.

Possibly it is, especially if comb honey is to be produced. It should be done just before the main honey harvest, and to such an extent that all the combs in the united colony will be well filled with brood.—W. Z. HUTCHINSON.

I do not consider it profitable. I prefer to build up weak colonies by drawing frames from which the young bees are emerging from strong colonies.—J. E. POND.

No, it is not. But it often is profitable to strengthen weak colonies by shaking down young bees, taken from strong colonies, in front of the

weak ones. I do it by placing a sheet in front of the weak colony, and then take a comb with the bees from a strong colony, being careful not to take out the queen, and shake them off on the sheet. The young bees will run into the hive, and will aid materially to build up the colony. The proceeding is always safe to the queen of the weak colony.—G. L. TINKER.

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Borodino, © N. Y.

[Our remarks about the losses in winter and spring were intended to apply in general—in the broad expanse of territory of North America.

We well-knew that in several localities (notably in the Eastern States) losses had been sustained in bees, and that the weather had been severe, but in general the winter was not rigorous, the spring was mild, and consequently the losses of bees were light, when the whole country was encompassed.

The suggestions of Brother Doolittle about the unreasonableness of expecting queens in the North to be shipped in May, is just to the point, and timely as well!

Advertisers should always state the probable time, after which orders could be filled. Nothing can be made by being unjust or unreasonable in our thoughts, feelings, or business transactions.—Ed.]

The Natural History of Bees.

A correspondent has sent us a copy of the *Literary Magazine* published in England in October, 1897—just 80 years ago. It contains an editorial article with the above heading, which we copy entire as requested by our correspondent, knowing that it will be read with interest, and show to the apiarists of to-day that much more was known a century ago about bees than many now are willing to admit. Here is the article entire:

The skill and dexterity of the honey-bees, displayed in the construction of their combs or nests, have at all times called forth the admiration of mankind. They are composed of cells regularly applied to each other's sides. These cells are uniform hexagons or six-sided figures. In a beehive, every part is arranged with such symmetry, and so finely finished, that, if limited to the same materials, the most expert workman would find himself unqualified to construct a similar habitation, or rather a similar city.

In the formation of their combs, bees seem to resolve a problem which would be not a little puzzling to some geometers, namely, a quantity of wax being given, to make of it equal and similar cells of a determined capacity, but of the largest size in proportion to the matter employed, and disposed in such a manner as to occupy in the hive the least possible space. Every part of this problem is completely executed by the bees. By applying hexagonal cells to each other's sides, no void spaces are left between them; and, though the same end might be accomplished by other figures, yet they would necessarily require a greater quantity of wax. Besides, hexagonal cells are better fitted to receive the cylindrical bodies of these insects. A comb consists of two strata cells applied to each other's ends. This arrangement both saves

room in the hive, and gives a double entry into the cells of which the comb is composed. As a further saving of wax, and preventing void spaces, the bases of the cells in one stratum of a comb serve for bases to the opposite stratum.

In a word, the more minutely the construction of these cells are examined, the more will the admiration of the observer be excited. The walls of the cells are so extremely thin, that their mouths would be in danger of suffering by the frequent entering and issuing of the bees. To prevent this disaster, they make a kind of ring around the margin of each cell, and this ring is three or four times thicker than the walls.

It is difficult to perceive, even with the assistance of glass hives, the manner in which bees operate when constructing their cells. They are so eager to afford mutual assistance, and, for this purpose, so many of them crowd together, and are perpetually succeeding each other, that their individual operations can seldom be distinctly observed. It has, however, been plainly discovered, that their two teeth are the only instruments they employ in modeling and polishing the wax. With a little patience and attention, we perceive cells just begun; we likewise remark the quickness with which a bee moves its teeth against a small portion of the cell. This portion the animal, by repeated strokes on each side, smooths, renders compact, and reduces to a proper thinness of consistence.

While some of the bees are lengthening their hexagonal tubes, others are laying the foundation of new ones. In certain circumstances, when extremely hurried, they do not complete their new cells, but leave them imperfect till they have begun a number sufficient for their present exigencies. When a bee puts its head a little way into a cell, we easily perceive it scraping the walls with the points of its teeth, in order to detach such useless and irregular fragments as may have been left in the work. Of such fragments the bee forms a ball about the size of a pin-head, comes out of the cell, and carries this wax to another part of the work where it is needed. It no sooner leaves the cell than it is succeeded by another bee which performs the same office, and in this manner the work is successfully carried on till the cell is completely polished.

The cells of bees are designed for different purposes. Some of them are employed for the accumulation and preservation of honey. In others the female deposits her eggs, and from these eggs worms are hatched, which remain in the cells until their final transformation into flies. The drones or males are larger than the common or working bees; and the queen, or mother of the colony, is much larger than either. A cell destined for the lodgment of a male or female worm must, therefore, be considerably larger than the cells of the smaller working bees.

The number of cells destined for the reception of the working bees far

exceeds those in which the males are lodged. The honey-cells are always made deeper and more capacious than the others. When the honey collected is so abundant that the vessels cannot contain it, the bees lengthen, and of course deepen the honey-cells.

Their mode of working, and the disposition and division of their labor, when put into an empty hive, do much honor to the sagacity of bees. They immediately begin to lay the foundations of their combs, which they execute with surprising quickness and alacrity. Soon after they begin to construct one comb, they divided into two or three companies, each of which, in different parts of the hive, is occupied with the same operations. By this division of labor, a greater number of bees have an opportunity of being employed at the same time, and, consequently, the common work is sooner finished. The combs are generally arranged in a direction parallel to each other. An interval or street between the combs is always left, that the bees may have a free passage, and an easy communication with the different combs in the hive. These streets are just wide enough to allow two bees to pass one another. Beside these parallel streets, to shorten their journey when working, they have several round cross-passages, which are always covered.

Hitherto we have chiefly taken notice of the manner in which bees construct and polish their cells without treating of the materials they employ. We have not marked the difference between the crude matter collected from flowers and the true wax. Everybody knows that bees carry into their hives, by means of their hind thighs, great quantities of the farina or dust of flowers. After many experiments made by Reaumur, with a view to discover whether this dust contained real wax, he was obliged to acknowledge that he could never find that wax formed any part its composition. He at length discovered that wax was not a substance produced by the mixture of farina with any glutinous substance, nor by trituration, nor any mechanical operation. By long and attentive observation, he found that the bees actually eat the farina which they so industriously collect; and that this farina, by an animal process, is converted into wax. This digestive process, which is necessary to the formation of wax, is carried on in the second stomach, and perhaps in the intestines of bees. After knowing the place where this operation is performed, chymists will probably allow that it is equally difficult to make real wax with the farina of flowers, as to make chyle with animal or vegetable substances, a work which is daily executed by our own stomach and intestines, and by those of other animals.

Reaumur likewise discovered that all the cells in a hive were not destined for the reception of honey, and for depositing the eggs of the female, but that some of them were employed as receptacles for the farina of flowers, a species of food that bees find necessary for the formation of

wax, which is the great basis and raw material of all their curious operations. When a bee comes to the hive with its thighs filled with farina, it is often met near the entrance by some of its companions, who first take off the load, and then devour the provisions so kindly brought to them. But when none of the bees employed in the hive are hungry for this species of food, the carriers of the farina deposit their loads in cells prepared for that purpose. To these cells the bees resort, when the weather is so bad that they cannot venture to go to the fields in quest of fresh provisions. The carrying bees, however, commonly enter the hive loaded with farina. They walk along the combs, beating and making a noise with their wings. By these movements they seem to announce their arrival to their companions. No sooner has a loaded bee made these movements than three or four of those within leave their work, come up to it, and first take off its load, and then eat the materials it has brought.

As a further evidence that the bees actually eat the farina of flowers, when the stomach and intestines are laid open, they are often found to be filled with this dust, the grains of which, when examined by the microscope, have the exact figure, color and consistence of farina taken from the anthers of particular flowers. After the farina is digested and converted into wax, the bees possess the power of bringing it from their stomachs to their mouths.

The instrument they employ in furnishing materials for constructing their waxen cells is their tongue. This tongue is situated below the two teeth or fangs. When at work the tongue may be seen by the assistance of a lens and a glass-hive. It is then in perpetual motion, and its motions are extremely rapid. Its figure continually varies. Sometimes it is more sharp, at others it is flatter, and sometimes it is more or less concave, and partly covered with a moist paste or wax. By the different movements of its tongue the bee continues to supply fresh wax to the two teeth, which are employed in raising and fashioning the walls of its cells, till they have acquired a sufficient height. As soon as the moist paste or wax dries, which it does almost instantaneously, it then assumes all the appearances and qualities of common wax. There is a still stronger proof that wax is the result of an animal process. When bees are removed into a new hive, and closely confined from the morning to the evening, if the hive chances to please them, in the course of this day several waxen cells will be formed, without the possibility of a single bee having had access to the fields.

Besides, the rude materials, or the farina of plants carried into the hive, are of various colors. The farina of some plants employed by the bees is whitish; in others it is of a fine yellow color; in others it is almost entirely red; and in others it is green. The combs constructed with these differently colored materials are, however,

uniformly of the same color. Every comb, especially when it is newly made, is of a pure white color, which is more or less tarnished by age, or by other accidental circumstances. To bleach wax, therefore, requires only the art of extracting such foreign bodies as may have insinuated themselves into its substance, and changed its original color.

Bees, from the nature of their constitution, require a warm habitation. They are likewise extremely solicitous to prevent insects of any kind from getting admittance into their hives. To accomplish both these purposes, when they take possession of a new hive, they carefully examine every part of it, and if they discover any small holes or clincks, they immediately paste them firmly up with a resinous substance which differs considerably from wax. This substance was not unknown to the ancients. Pliny mentions it under the name of propolis or bee-glue. Bees use the propolis for rendering their hives more close and perfect in preference to wax, because the former is more durable, and more powerfully resists the vicissitudes of weather than the latter. This glue is not, like wax, procured by an animal process. The bees collect it from different trees, as the poplars, the birches, and the willows. It is a complete production of Nature, and requires no addition or manufacture from the animals by which it is employed. After a bee has procured a quantity sufficient to fill the cavities in its two hind thighs, it repairs to the hive. Two of its companions instantly draw out the propolis, and apply it to fill up such chinks, holes, or other deficiencies, as they find in their habitation.

But this is not the only use to which bees apply the propolis. They are extremely solicitous to remove such insects or foreign bodies as happen to get admission into the hive. When so light as not to exceed their powers, they first kill the insect with their stings, and then drag it out with their teeth. But it sometimes happens that an ill-fated snail creeps into the hive. It is no sooner perceived than it is attacked on all sides and stung to death. But how are the bees to carry out a burden of such weight? This labor they know would be in vain. They are perhaps apprehensive that a body so large would diffuse, in the course of its putrefaction, a disagreeable or noxious odor through the hive.

To prevent such hurtful consequences, immediately after the animal's death they embalm it by covering every part of its body with propolis, through which no effluvia can escape. When a snail with a shell gets entrance, to dispose of it gives much less trouble and expense to the bees. As soon as this kind of snail receives the first wound from a sting, it naturally retires within its shell. In this case the bees, instead of pasting it all over with propolis, content themselves with gluing all around the margin of the shell, which is sufficient to render the animal forever immovably fixed.

But propolis and the materials for making wax, are not the only substances these industrious animals have to collect. As formerly remarked, beside the whole winter, there are many days in summer in which the bees are prevented by the weather from going abroad in quest of provisions. They are, therefore under the necessity of collecting and amassing in cells destined for that purpose, large quantities of honey. This sweet and balsamic liquor they extract by means of their proboscis or trunk, from the nectariferous glands or flowers. The trunk of a bee is a kind of rough cartilaginous tongue. After collecting a few small drops of honey, the animal with its proboscis conveys them to its mouth and swallows them. From the oesophagus gullet it passes into the first stomach, which is more or less swelled in proportion to the quantity of honey it contains. When empty, it has the appearance of a fine white thread; but when filled with honey, it assumes the figure of an oblong bladder, the membrane of which is so thin and transparent, that it allows the color of the liquor it contains to be distinctly seen. This bladder is well known to children who live in the country. They cruelly amuse themselves with catching bees, and tearing them asunder, in order to suck the honey.

A single flower furnishes but a small quantity of honey. The bees are, therefore, obliged to fly from one to another till they fill their first stomachs. When they have accomplished this purpose, they return directly to the hive, and disgorge in a cell the whole honey they have collected. It not unfrequently happens, however, that, when on its way to the hive, it is accosted by a hungry companion. How the one can communicate its necessity to the other, it is perhaps impossible to discover. But the fact is certain that, when two bees meet in this situation, they mutually stop, and the one whose stomach is full of honey extends its trunk, opens its mouth, which lies a little beyond the teeth, and like ruminating animals, forces up the honey into that cavity. The hungry bee knows how to take advantage of this hospitable invitation. With the point of its trunk it sucks the honey from the other's mouth. When not stopped on the road, the bee proceeds to the hive, and in the same manner offers its honey to those who are at work, as if it meant to prevent the necessity of quitting their labor in order to go in quest of food. In bad weather, the bees feed upon the honey laid up in open cells; but they never touch these reservoirs when their companions are enabled to supply them with fresh honey from the fields. But the mouths of those cells which are destined for preserving honey during winter, they always cover with a lid or thin plate of wax.

We shall now give some account of the ingenious Mr. DeBraw's discoveries concerning the sex of bees, and the manner in which their species is multiplied. It was almost univer-

sally believed, both by ancients and moderns, that bees, like other animals, propagate by an actual intercourse of the male and female, though it never could be perceived by the most attentive observers. Pliny remarks, that *apium coitus visus est nunquam*; and even the indefatigable Reaumur, notwithstanding the many minute researches and experiments he made concerning every part of the economy of bees, and though he represents the mother, or queen-bee, as a perfect Messalina, could never detect an actual intercourse. From this singular circumstance, Miraldi, in his observations upon bees, conjectured that the eggs of bees, like those of fishes, were impregnated after they were deposited in the cells by the mother. He was further confirmed in this opinion by uniformly observing that a whitish liquid substance surrounded each egg which turned out to be fertile; but that those eggs round which no substance was to be found, were always barren. The working bees, or those which collect from flowers the materials of wax, have generally been considered as belonging to neither sex. But Mr. Schirach, a German naturalist, in his "History of the Queen of the Bees," maintains that all the common bees are females in a disguised or barren state; that the organs which distinguish the sex, and particularly the ovaria, are either obliterated, or, on account of their minuteness, have not hitherto been discovered; that, in the early period of its existence, every one of these bees is capable of becoming a queen-bee, if the community choose to nurse it in a certain manner, and to raise it to that distinguished rank; and that the queen-bee lays only two kinds of eggs, namely, those that are to produce drones or males, and those from which the working bees are to proceed.

The conjecture of Maraldi concerning the impregnation of the eggs after they are deposited in the cells, as well as the observations of Mr. Schirach concerning the sex of the working bees, have been completely verified by the experiments of Mr. Debraw. Both Maraldi and Reaumur had long ago discovered that in every hive, beside the large drones, there are males or drones as small as the working bees. By means of glass-hives, Mr. Debraw observed that the queen-bee begins to deposit her eggs in the cells on the fourth or fifth day after the bees begin to work. On the first or second day after the eggs are placed in the cells, he perceived several bees sinking the posterior parts of their bodies into each cell, where they continued but a short time. After they had retired, he saw plainly with the naked eye a small quantity of whitish liquid left in the bottom of each cell that contained an egg. The next day he found that this liquid was absorbed into the egg, which, on the fourth day, is hatched. When the worms escape from the eggs, they are fed for eight or ten days with honey by the working bees. After that period they shut up the mouths of the cells, where the worms continue inclosed for ten days more, during which time they

undergo their different transformations.

"I immersed," says Mr. Debraw, "all the bees in water; and, when they appeared to be in a senseless state, I gently pressed every one of them between my fingers, in order to distinguish those armed with stings from those that had none, which last I might suspect to be males. Of these I found 67, exactly of the size of common bees, yielding a little whitish liquor on being pressed between the fingers. I killed every one, and replaced the colony in a glass hive, where they immediately applied again to the work of making cells; and on the fourth or fifth day, very early in the morning, I had the pleasure to see the queen-bee depositing her eggs in those cells, which she did by placing the posterior part of her body in each of them. I continued to watch most part of the ensuing days, but could discover nothing of what I had seen before. The eggs, after the fourth day, instead of changing in the manner of caterpillars, were found in the same state they were in the first day." The next day about noon, the whole colony forsook the hive, probably because the animals perceived that, without the assistance of males, they were unqualified to multiply their species. To show the necessity of the eggs being fecundated by the male influence, Mr. Debraw relates an experiment still more decisive.

"I took," says he, "the brood-comb which, as I observed before, had not been impregnated; I divided it into two parts; one I placed under a glass bell, No. 1, with honey comb for the bees' food; I took care to leave a queen, but no drones, among the common bees I confined in it. The other piece of brood-comb I placed under another glass bell, No. 2, with a few drones, a queen, and a number of common bees proportioned to the size of the glass. The result was, that in the glass No. 1 no impregnation happened; the eggs remained in the same state they were in when put into the glass; and, upon giving the bees their liberty on the seventh day, they all flew away, as was found to be the case in the former experiment; whereas in the glass No. 2, I saw the very day after the bees had been put under it, the impregnation of the eggs by the drones in every cell containing eggs; the bees did not leave their hive on receiving their liberty; and in the course of 20 days, every egg underwent all the above mentioned necessary changes, and formed a pretty numerous young colony in which I was not a little startled to find two queens."

The appearance of a new queen in a hive where there was no large or royal cell, made Mr. Debraw conjecture that the bees are capable, by some particular means, of transforming a common subject into a queen. To ascertain the truth of this conjecture, he provided himself with four glass hives, into each of which he put a piece of brood-comb taken from an old hive. These pieces of brood-comb contained eggs, worms and nymphs. In each hive he confined a

sufficient number of common bees, and some drones or males, but took care that there should be no queen.

"The bees," Mr. Debraw remarks, "finding themselves without a queen, made a strange buzzing noise, which lasted nearly two days, at the end of which they settled, and betook themselves to work. On the fourth day I perceived in each hive the beginning of a royal cell, a certain indication that one of the inclosed worms would soon be converted into a queen. The construction of the royal cell being nearly accomplished, I ventured to leave an opening for the bees to get out, and found that they returned as regularly as they do in common hives, and showed no inclination to leave their habitation. But, to be brief, at the end of 20 days I observed four young queens among the new progeny."

To these experiments of Mr. Debraw it was objected that the queen-bee, besides the eggs which she deposits in the royal cells, might likewise have laid royal or female eggs in the common cells; and that the pieces of brood-comb so successfully employed in his experiments for the production of a queen, had always happened to contain one of these royal eggs, or rather one of the worms proceeding from them. But this objection was afterwards removed by many other accurate experiments, the results of which were uniformly the same; and the objectors to Mr. Debraw's discovery candidly admit that, when the community stands in need of a queen, the working bees possess the power of raising a common subject to the throne; and that every worm of the hive is capable, under a certain course of management, of becoming the mother of a numerous progeny. This metamorphosis seems to be chiefly accomplished by a peculiar nourishment carefully administered to the worm by the working bees, by which, and perhaps by other unknown means, the female organs, the germs of which previously existed in the embryo, are expanded, and all those differences in form and size, that so remarkably distinguish the queen from the working-bees, are produced.

It is always a fortunate circumstance when discoveries, which at first seem calculated solely to gratify curiosity, are capable of being turned to the advantage of society. Mr. Debraw, accordingly, has not failed to point out the advantages that may be derived from his researches into the economy and nature of bees. By his discovery we are taught an easy mode of multiplying, without end, swarms or new colonies of these useful insects.

The practice of this new art, Mr. Schirach informs us, has already extended itself through Upper Lusatia, the Palatinate, Bohemia, Bavaria, Silesia and Poland. In some of these countries it has excited the attention, and acquired the patronage of government. The late Empress of Russia, who never lost sight of a single article by which the industry, and, of course, the happiness of her subjects could be augmented, sent a proper person to Klein Bautzen, to be instructed in this new, important art.

For the American Bee Journal.

Legislation on Priority of Location.

WM. F. CLARKE.

On page 332, Dr. Miller claims that I misunderstood his position, and complains that I still cling to my previous misunderstanding of it in the face and teeth of his correction. I cannot admit that I misunderstood the worthy Doctor, especially as so many interpreted him in the same way I did. Is it not possible for a man to misunderstand himself? So Burns thought, evidently, when he penned the lines:

"O wad some power the giftie gie us
To see ourselves as others see us,
It wad frae many a blunder free us,
And foolish notion."

The Doctor says, he "never desired legislation in favor of priority of location, nor advocated it." Then, what in the name of common-sense was he driving at? Will he please tell us?

It cannot surely be that he wished a bee-keeper to be able to buy a right to a certain area as a honey-field, and then, armed with his legal document, to evict all others. I can understand how being a first-comer into a locality should give a bee-keeper a right of pre-emption on which he might secure a title to the honey-yield of a prescribed area, but I cannot imagine any other way in which such a right could be claimed or upheld.

The Doctor, in a brief letter to the *Canadian Bee Journal*, refers me to his first utterance on the subject as that on which he is willing to be judged. It will be found on page 781 of *Gleanings* for Oct. 1, 1886. I quote as follows:

"It is of practical importance, if my position is correct, to be able to invest time and money in this business, and have some feeling of security that there is some permanence about it; that no mere whim of some envious neighbor may drive me out of the business next year; that after making investments in buildings, fixtures, and perhaps special pasturage, I may feel secure that no one else may be able, by overstocking, to drive me from my field. In plain words, I take the radical ground that legislation is needed, whereby, in some way, under proper restrictions and limitations, I may have the control of a certain number of acres or square miles as a range for my bees."

Who is this "envious neighbor" of whose intrusion the Doctor is afraid? Is he not, manifestly, a new comer whom the Doctor would like to have legal power to exclude? I fail to see who else it can be, or on what ground except that he was a prior occupant, the Doctor could base the right to shut him out.

A question of fact has been raised. Has Dr. Miller advocated "priority of location," or has he not? I have asserted that he has, and furnished ample proof of the assertion, the Doctor himself being the chief witness on my side. He pleads "Not guilty." I cannot withdraw "the indictment."

There is nothing for it, but to refer the case to a jury. I am content the jury should be the whole body of intelligent bee-keepers, or any twelve disinterested and uncommitted members of that body. To their verdict, I leave the matter.
Guelph, Ont.

For the American Bee Journal.

Improvements in Bee-Hives.

J. W. TEFFT.

Any one who noted the character of bee-hives that have been originated during the past 40 years, must have seen the prevalence of a different spirit from that which pervaded the community in years before. Individuality has had a chance, and each successive new hive has possessed a character of its own, instead of being a slightly modified reproduction of some hive that was built in early years. Bee-keepers had no views—mechanical or architectural—to build hives in harmony with the bees. The sole idea was to have a carpenter to make walls in box-shape, on varying plans, clap on a roof, run sticks crosswise to hold the combs up until full, when the bees were brimstoned in order to get the honey. For the past 40 years no hive of any pretensions was devoid of a so-called movable frame.

To this slowly succeeded the present era of independence, and the result is the breaking up of that uniformity of honey producing which promised to make bee-keeping as monotonous as the old box-hive. This breaking away from the slavery of custom and of set fashion in the matter of hives and frames, has been productive of splendid results, but it has at the same time brought with it some evils. There are few things more to be despised than that servility of spirit which makes people do things different from things done by their neighbors, whether the example is right or wrong; but it is no more to be commended that the beaten path should be varying.

To do things in a way different from that followed by other people, only because the way is different, seems rather ridiculous than otherwise, and is usually rewarded with the laughter which it deserves.

This independence in bee-hive construction is to be continued this year, and the effect of the hives now "building," and about to be started, will add yet more to American character, as a country of independent thinkers. A comparison with other countries will show that in the matter of bee-hives we are well in the lead, and that we can in this respect well lay claim to the title of "independent bee-keepers." This feature is not confined to any one neighborhood, nor to any one State, and even the speculative supply manufacturers who deal in low-priced bee-hives and their sales are hastened by the addition of one or two artistic details in architecture of slotted top-bars, in-

vertible sectional bee-hives, and reversible interchangeable-frames. The popular AMERICAN BEE JOURNAL is advancing education in this respect, as in many others, and America may congratulate herself that she is in the front rank of advance.

There is no reason why bee-keepers should not move ahead with the best of improvements in bee-hives. A little strong infusion of Yankee spirit of enthusiastic rivalry—a little more American pride—a little more effort to secure something to be proud of (and no country has more natural advantages), and we shall see bee-keeping traveling forward as she never moved before.

Collamer, © N. Y.

Read at the Maine Convention.

How to Make Bee-Keeping Profitable.

ISAAC HUTCHINS.

I believe that bees winter better and build up quicker in the spring where they are well packed with chaff or dry sawdust on the summerstands, than they do when wintered in a cellar. Spring dwindling, I believe in most cases, is a result of cellar wintering.

Those who winter bees in a cellar use a single-walled hive, and when they put them out in the spring, the sun will warm them so that many bees will fly out when the air is so cold that they become chilled and never return. If we have a few days of warm weather, and they have all the brood that they can care for, one cold night will drive the bees into a cluster, and leave the brood to die.

The bee-hive needs protection from the rays of the sun, and the cold storms and winds of early spring, as much as it does in the winter months when there is no brood to chill. We should encourage breeding early in the spring, remembering that it is the early bees that store the surplus honey.

As soon as the weather will admit in the spring, examine each colony to ascertain if they are in need of aid. No. 1 may have lost its queen; No. 2 may be short of stores; No. 3 may be weak in numbers, and need a frame of ripe brood. I should be very sorry to have a colony die for want of food or care, after they had survived a cold winter.

If bees are well wintered and well cared for in the spring, they will be ready to divide or swarm before the white clover honey harvest. If to be divided, it should be done at least ten days before the honey flow commences, and the honey sections should be put on soon after, so that the bees may get settled down to business in season to give good returns. In dividing, leave each colony as strong as it will do, and not induce swarming.

To make bee-keeping profitable, we must have a love for the business, and if we do not love the business-end of the bee, we should learn not to fear it. We must become acquainted with the natural laws governing the honey-

bees. A "Manual of the Apiary" will be found in the library of every progressive bee-keeper. We have made great improvements in bee-culture within the last decade, and many more are needed and are continually being made, and unless we subscribe for and read a good bee-periodical we shall be left behind. I frequently find a single article in my bee-paper that is worth more to me than the price of a year's subscription.

Nothing is better calculated to mislead us than the idea that bee-culture has acquired perfection, and that we know it all. Americans may lead the world in this art, but it is in its infancy, and who can tell what the coming bee will be like? We should keep a register of the apiary, so that at a mere glance we can ascertain the age, race, strain and quality of the queen of any colony; determine the character of her progeny; the amount of honey stored, and the increase.

By having a history of each colony before us, we can avoid many mistakes that will occur, if we depend upon a treacherous memory. We should have every thing needed in the apiary on hand, and ready for use at the commencement of the season, and we should give our bees all needful care, and supply their wants at the proper time. There should be no putting off until to-morrow what should be done to-day.

Dexter, ♂ Maine.

For the American Bee Journal.

Pollen in the Sections.

W. Z. HUTCHINSON.

I am in receipt of a card from F. A. Gemmill, asking the following question: "What remedy would you suggest to keep pollen out of the sections when hiving swarms on empty frames? That is the stickler in this locality—Ont., Canada."

I think Mr. G. could not have found one who knows less upon this subject than does myself. Not more than two or three of my sections in one thousand have contained pollen or bee-bread. It is possible that locality may account for its absence; and, again, it is possible that queen-excluding honey-boards also exclude the pollen, as where the brood goes, there also appears the pollen. Before I used queen-excluders I was troubled with the queen going into the sections, and then sections adjoining those containing brood were almost always filled with bee-bread.

I presume that Mr. Gemmill's idea is, that the bees having no combs in the brood apartment would store pollen in the combs furnished them in the supers. I am aware that this would be a natural inference, and I will admit that I feared there might be trouble when I began using the new Heddon hive, but the result only proved the excellency of that old advice, to "never trouble trouble, till trouble troubles you;" for no bee-bread made its appearance in the

supers when hiving swarms with starters only in the brood-frames.

Whenever I do find pollenized sections, they are over a colony that has not sent out a swarm, and has no queen-excluding board in use; after a swarm has issued from a parent colony it seems to devote its whole energy for a few days to the gathering of honey, not pollen, and but little brood is reared at first while the queen is recuperating her exhausted energies. By the time that brood is being reared, comb has been built, and there is room for the storing of pollen.

This is how I have reasoned upon the subject, but, if others who have adopted my method are troubled by newly-hived swarms storing pollen in sections, I see no explanation except that of locality. Still, the fact remains that I have never found a pollenized section over a newly-hived swarm when managed as I advise, while I have occasionally found one over a colony that has not swarmed; hence, I reason that using starters only in the brood-nest when hiving swarms ought not to lead to the storing of pollen in sections.

Rogersville, ♂ Mich.

For the American Bee Journal.

Hints to Beginners in Bee-keeping.

JOHN SHALLCROSS.

The use of comb foundation, besides being an encouraging invitation to the bees to commence immediate work, is a great saving of honey. It is estimated that at least 20 pounds of honey are consumed in elaborating one pound of wax.

Some have supposed that wax was gathered by the bees from plants, or manufactured by them from pollen; but such is not the case. It is the natural, unctuous secretion of the bee, which exudes from the wax pockets between the chitinous folds of the under part of the body, and is produced most abundantly during the honey harvest. When most needed the bees seem to have the faculty of producing it as required. If supplied in the shape of comb or foundation, they give less attention to its production and more to the gathering of stores.

These are facts of which the experience of the beginner in bee-keeping will soon enable him to take advantage, and thus he will learn to make the most profitable use of his bees.

Occasionally the section-boxes will need inspection. When full, and the cells nicely capped, they must be at once removed and replaced with empty sections. If allowed to remain in the hive, the bees will mar the purity of the white wax by constantly traveling over it.

This process of obtaining honey will exhibit the advantage of the movable-frame system. At all times the apiarist has access to every comb, and can remove or exchange frames, and direct in what part of the hive

the bees shall store honey, and of the thickness they shall build their combs.

With the non-progressive, old-fashioned box-hive, the bee-keeper must helplessly wait until he shall destroy his colony over the sulphur pit, to see if there is left for him even a moderate quantity of honey of inferior quality, and in an unmarketable condition.

Philadelphia, ♂ Pa.

For the American Bee Journal.

May and June Management.

H. GRIFFIN.

I say May, because the season is a month late; I am doing the things that I ought to have done a month ago.

A beginner in bee-keeping having say 10 colonies, should take the 6 strongest for comb honey, and the other 4 for extracted. Having the sections and division-boards, from one of the colonies worked for comb honey take all the frames with no brood, shaking all the bees off, and if they are not very strong in bees, take out one or two of the frames that had brood; put in the board, and fill the space bee-tight between the board and the side of the hive with something. Close the entrance on the sides; and put on the sections.

Now, having some combs, take the ones with brood and put them in the bottom of one of the hives worked for extracted honey, lifting out the frames in the place of them, and putting all the frames having no brood in the top, and so on with all the hives, filling out the rest of the top with full sheets of foundation. When the strongest of these colonies have pretty nearly all of the tops of their hives full, exchange combs with the ones not being so nearly complete—not extracting any until all are full.

Kilgore, ♂ Ky.

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We supply the American Bee Journal one year, and any of the following publications, at the prices quoted in the last column of figures. The first column gives the regular price of both. All postage prepaid.

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One yearly subscription for the AMERICAN BEE JOURNAL must be ordered with each paper or book, in order to take advantage of the prices named in the last column.

Local Convention Directory.

1887. *Time and place of Meeting.*
 Nov. 9-11.—North American, at Chicago, Ills.
 W. Z. Hutchinson, Sec., Rogersville, Mich.
 Dec. 7-9.—Michigan State, at East Saginaw, Mich.
 H. D. Cutting, Sec., Clinton, Mich.

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—Ed.

SELECTIONS FROM
OUR LETTER BOX

Paradise for Bee-Hunters.—A. F. Robson, Italy, ♀ N. Y., writes:

I have read with interest the article on page 361, quoted from the New York *Medical Journal* of May 14, entitled "The Black Bees of Tasmania and their Medicinal Honey." That article predicts that honey is destined to play a great part in the treatment of certain diseases, etc. It seems to me that, considering the high authority of this article, it will retire (at least temporarily) the fabulous stories of Western bee-trees, California honey-caves, etc., of which we have heard so much; and that Tasmania will, in the future, be a "Mecca" towards which all bee-hunters will travel.

Perfectly Quiet in Winter.—P. L. Gibson, Muscatine, ♀ Iowa, says:

My experience and observation in wintering bees "out-doors" is, that in zero weather, or colder, bees are perfectly quiet until disturbed.

Bountiful Rains and Flattering Prospects.—Geo. E. Hilton, Fremont, ♀ Mich., on June 4, 1887, says:

We have had bountiful rains, and honey is coming in splendidly, with very flattering prospects for the season. My bees are in the best possible condition, and are storing in the surplus cases.

Stores over the Bees in Winter.—M. L. Barney & Bro., Hartford, ♀ Wis., on June 6, 1887, write:

Our colonies are in good condition, increasing finely in bees, and some are swarming naturally. We use the Badger State hive, and winter our bees with the supers on. We do not believe in feeding syrup for stimulating colonies in the spring. Our aim is to have colonies go into winter quarters with queens not more than one year old, with an abundance of good honey, and good ventilation. Let the bees use their own economy in rearing brood, and do not put combs in between sheets of brood, as we used to do, and never make up colonies until about the beginning of white clover bloom. We do not extract until about July 10, when we extract only part of the honey in the

supers. As the season comes to a close, we have every frame in the supers full of sealed honey; the frames being deep, the bees always have plenty of honey directly over the cluster, where they can get it at all times. The honey never becomes sour when over the bees, on account of the heat from the colony. In the flat frame, it will be noticed that the honey in the centre of the hive will be gone, while there will be sufficient honey in the ends of the frames, the honey being so far from the cluster that it is very often sour; while if directly over the bees it is sweet and good. If we had an apiary in a mild climate, we would prefer a shallow frame, but in Wisconsin no one could induce us to use one, judging by past and present experience.

Fruit and Bees.—Z. A. Clark, Arkadelphia, ♀ Ark., on June 6, 1887, writes thus:

The time expires to-day for all bee-keepers to leave town and take their bees with them. The City Council is in session now. I can prove by a majority of my neighbors that bees are not a nuisance, and are not destructive to fruit. We have made some close tests to demonstrate the destruction of fruit by bees. What the result will be we shall soon find out by the action of the City Council.

In our next issue we shall publish a report of some more experiments made by Mr. N. W. McLain, reported officially to the United States Entomologist, and just published among the "Reports of observations and experiments in the practical work of the Division made under the direction of the entomologist." This will throw some further light on the senseless war of the fruit-culturists against the bees.—Ed.]

Inverting Brood-Frames.—15—H. S. Ball, (43), of Granby, Quebec, on June 3, 1887, says:

I have found by experiment, that to empty combs in the end of a hive, and invert the frames with brood and honey, bees will carry all of the honey out of the brood-frames into the empty ones, when they are very easily taken out and extracted without disturbing the brood; and by so doing there is more space for the queen to deposit eggs. This is something new to me, and it may be new to others.

Bees in Cities.—Frank A. Eaton, Bluffton, ♀ O., on June 3, 1887, says:

I notice that there is a craze or war against bees in corporations. I learned yesterday that the Town Council of Ada, O., has prohibited the keeping of more than 2 colonies by one person within the city limits. One man had over 100 colonies, which he has sold. Ada is a town of about 2,000 inhabitants, only 12 miles from here.

Queenless Colonies Gathering Pollen.—T. F. Kinsel, Shiloh, ♀ Ohio, writes:

I notice an inquiry by some one desiring to know if bees will carry in pollen if queenless. They will. I made colonies according to "Simmins," and the queenless parts carry in pollen as well as the parts having the queens. So the pollen carrying by the field workers is no guide in May and June. It might be immediately upon removal from the cellar, or upon the first flight when pollen comes in the spring, when bees were wintered out-of-doors. A better guide would be to look over the combs for queen or eggs.

Clover Bloom, but no Honey.—J. Nebel & Son, High Hill, ♀ Mo., on June 1, 1887, write:

White clover is in full bloom, and our bees are not gathering any surplus honey from it. Some colonies have gathered hardly enough honey this spring to keep them alive, and keep up brood-rearing. Colonies that have drones are killing them. We have to feed to keep them from killing all.

Specimen Bees, etc.—M. G. Maddock, Marion, ♀ Iowa, writes thus on May 30, 1887:

What kind of a bee is the enclosed? Our raspberries are swarming with them. It is rather too dry and cool in this locality for bees. I had one swarm on May 26.

[The small black bee sent by Mr. Maddock is too crushed for a complete identification. It is a species of *Andrena*. Bees of this genus are often taken in hives while stealing the honey. They look some like the common black bee in a general way, but are smaller, and when closely examined they are seen to be quite different.

Let me urge all who send insects, to put them into a close, strong tin box. Simply placed in a letter they are so crushed as to be beyond identification, and are rendered useless as specimens.—A. J. COOK.]

Queen Mated within a Hive, etc.—J. W. Tefft, Collamer, ♀ N. Y., on June 7, 1887, writes:

About April 1 Mr. Wilenan, of this place, noticed that his best colony of Italian bees superseded their queen, and started queen-cells. I inquired as to the drones, and learned that there were none. But in one colony there was some sealed drone-brood. I suggested to him to put that frame of drone-brood in the hive containing the queen-cells. This queen-cell was not capped over, but the drone-brood was. The following 16 days the weather was cool, and no bees were on the wing, and no drones or bees

were in sight except those we saw inside the hive. On the sixteenth day the colony was examined, and a patch of worker-eggs about 6 inches in diameter was found. Was the queen mated inside the hive? She must have been, as it was so cold that not a bee was to be seen. Drones do not fly until 7 days old, so we are told by the veteran bee-keepers. We had our doubts whether the bees would be worker bees, so we have waited to see, and they are all right. Another experience: I bought a queen last August, introduced her successfully at the time to a powerful colony of black bees, having 7 frames of brood. That queen never laid an egg last fall. The bees wintered, also the queen; and up to yesterday it had not laid, when I killed her, and gave the bees a frame of eggs. What was the matter with that queen? Will some one tell?

Alsike at a Premium.—A. J. Cook, Agricultural College, Mich., on June 3, 1887, writes:

Our bees are swarming, although we have had no honey yet, and there is very little white clover. This is when Alsike would be at a premium.

Good Crop Expected.—P. P. Nelson, Manteno, Ills., on June 9, 1887, says:

My bees wintered all right. We are now having timely and abundant showers, and there is now every indication that the crop of bees and honey will be a good one.

Description of a Bee-Cellar.—F. A. Gibson, Racine, Wis., on May 31, 1887, writes:

At the request of Chas. Solveson and some others, I will give the following description of my bee-cellar: It is 16x24 feet, and 7 feet deep. It has a stone wall all around, with one tier of soft brick set on edge and cemented together on the inside of the stone wall, with an air space of 4 inches between. The floor is also cemented, and the ceiling has 10 inches of dry sawdust between the two floors for ventilation. I have 3-inch tile just above the ground floor; also one just below the floor, for water to run out. The drain and ventilator is about 60 feet long. My honey-house is on top of the cellar.

Queens Entering Wrong Hives, etc.—Edwin Baldwin, Mendon, Ills., on June 8, 1887, writes:

What will keep queens from entering the wrong hive? In mating, many enter hives 20 or more feet distant. It has been rather dry here all the spring, in consequence of which the tubes of the red clover are shorter than usual, and the bees are working on it freely. In consequence of the dry weather, the white clover is about half a crop; but it yields fairly well. My bees are in good condition, and are working in the supers, the honey coming mostly from red clover.

White Clover and Basswood.—C. W. Dayton, Bradford, Iowa, on June 7, 1887, writes:

The white clover will yield but little this year, as it is nearly dried up. Basswood promises a full bloom, but it will be very early and likely of short continuance. I was tearing down queen-cells on May 25, to prevent swarming in several colonies. I have to feed daily to prevent starvation, but luckily I have just extracted 1,200 pounds of last year's crop, that was stored away in combs. It is dark and blue, and was gathered in the fall—not fit to sell, at least not to the ignorant.

Hot Weather in Arizona.—M. H. Mendelson writes from Casa Grande, Arizona, on May 31, 1887, thus:

The average heat here for the past few days has been 100° above zero, in the shade, and the hot weather for the season is but just commencing. I am going back to San Buenaventura, Calif., in a few days.

Home Market for Honey.

To create Honey Markets in every village, town and city, wide-awake honey producers should get the Leaflets "Why Eat Honey" (only 50 cents per 100), or else the pamphlets on "Honey as Food and Medicine," and scatter them plentifully, and the result will be a DEMAND for all of their crops at remunerative prices. "Honey as Food and Medicine" are sold at the following prices:

Single copy, 5 cts.; per doz., 40 cts.; per hundred, \$2.50. Five hundred will be sent postpaid for \$10.00; or 1,000 for \$15.00. On orders of 100 or more, we will print, if desired, on the cover-page, "Presented by," etc. (giving the name and address of the beekeeper who scatters them)

To give away a copy of "Honey as Food and Medicine" to every one who buys a package of honey, will sell lots of it.

System and Success.

All who intend to be systematic in their work in the apiary, should get a copy of the Apiary Register and commence to use it. The prices are reduced, as follows:

For 50 colonies (120 pages).....	\$1 00
" 100 colonies (220 pages).....	1 25
" 200 colonies (420 pages).....	1 50

The larger ones can be used for a few colonies, give room for an increase of numbers, and still keep the record all together in one book, and are therefore the most desirable.

Simmins' Non-Swarming System is the title of a new English bee-book. The author claims that it will inaugurate a "new era in modern bee-keeping," and states that "it is based upon purely natural principles, and is the only system that can ever be relied upon, because no other condition exists in the economy of the hive that can be applied to bring about the desired result—a total absence of any desire to swarm." It contains 64 pages; is well printed and illustrated. Price 50 cents. It can now be obtained at this office.

Honey and Beeswax Market.

The following are our very latest quotations for honey and beeswax:

CHICAGO.

HONEY.—Prices are about 10@12c. for comb, extracted, 5@7c., according to quality and packages. Stocks and demand light.

BEESWAX.—22c. R. A. BURNETT, June 9, 161 South Water St.

DETROIT.

HONEY.—Best white comb, 11@12c. Market is nearly bare, awaiting the new crop.

BEESWAX.—23@24c. M. H. HUNT, Bell Branch, Mich. June 10.

SAN FRANCISCO.

HONEY.—We quote: Extracted, white, 4@5 cts.; light amber, 4@5c.; amber, 4@5c. Comb, white, 12@14c.; amber, 7@8c. Demand good.

BEESWAX.—23c. May 8. SCHACHT & LEMCKE, 123-124 Davis St.

CLEVELAND.

HONEY.—Choice white in 1-lb. sections, 12@13c.; second quality, 10@11c.; and buckwheat unsalable at 8@9c. Extracted, 5@6c.

BEESWAX.—25c. A. C. KENDEL, 115 Ontario St. Apr. 20.

ST. LOUIS.

HONEY.—Choice comb, 10@12c. Strained, in barrels, 3@4@5c. Extra fancy, 1/4 more than foregoing prices. Extracted, 4@5c. Market dull.

BEESWAX.—Steady at 2@4c. for prime. May 20. D. G. TUTT & CO., Commercial St.

SAN FRANCISCO.

HONEY.—We quote: White comb, 12@14c.; amber, 7@10c. Extracted, white, 4@5c.; light amber, 3@4@5c. Market quiet.

BEESWAX.—19@21c. May 14. O. B. SMITH & CO., 423 Front St.

MILWAUKEE.

HONEY.—Choice white 1-lbs., 12@13c.; choice 2-lbs., 10@11c.; dark not wanted, and imperfect slow. Extracted, finest white in kegs, 6@7c.; in white in kegs and barrels, 6@8c.; dark, 4 to 4@5c.; amber, in barrels, 4@5c. Demand limited and supply small.

BEESWAX.—25c. June 10. A. V. BISHOP, 142 W. Water St.

NEW YORK.

HONEY.—We quote: White comb, 9@12c.; dark 5@7c. California comb, 8@9c.; extracted, 5@6c. Sales large and demand good.

BEESWAX.—28@24c. McCULL & HILDETH BROS., May 10, 28 & 30 W. Broadway, near Duane St.

KANSAS CITY.

HONEY.—We quote: White clover 1-lbs., 10@12 cts.; dark, 9 to 10c. White clover 2-lbs., 10 to 11c.; dark, 9 to 10c. Extracted, 5 to 10c. in small way. Very little extracted in the market.

May 18. CLEMONS, CLOON & CO., cor 4th & Walnut

BOSTON.

HONEY.—1-lb. packages of white clover honey at 13@15c.; 2-pounds at 11@13c. Extracted, 5@7c. Sales slow.

BEESWAX.—26 cts. per lb. Apr. 22. BLAKE & RIPLEY, 57 Chatham Street.

CINCINNATI.

HONEY.—We quote for extracted, 3@7c. per lb. Best comb brings 11@14c. per lb. Demand fair.

BEESWAX.—Good demand, 20@23c. per lb. for good to choice yellow. May 21. C. F. MUTH & SON, Freeman & Central Av.

The Production of Comb Honey, as practiced and advised by W. Z. Hutchinson, can be obtained at this office, for 25 cts.

Dr. Miller's Book, "A Year Among the Bees" (75 cts.), and the BEE JOURNAL for one year (\$1.00), both of which we will club for only \$1.50.

Should any Subscriber receive this paper any longer than it is desired, or is willing to pay for it, please send us a postal card asking to have it stopped. Be sure to write your name and address plainly. LOOK AT YOUR WRAPPER LABEL.



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PROPRIETORS.

923 & 925 WEST MADISON ST., CHICAGO ILL.
At One Dollar a Year.

ALFRED H. NEWMAN,
BUSINESS MANAGER.

Special Notices.

As there is Another firm in Chicago by the name of "Newman & Son," we wish our correspondents would write "American Bee Journal" on the envelope when writing to this office. Several letters of ours have already gone to the other firm (a commission house), causing vexatious delay and trouble.

To Correspondents.—It would save us much trouble, if all would be particular to give their P. O. address and name, when writing to this office. We have several letters (some inclosing money) that have no name; many others having no Post-Office, County or State. Also, if you live near one post-office and get your mail at another, be sure to give the address we have on our list.

The Convention History of America with a full report of the proceedings of the Detroit and Indianapolis conventions, and the AMERICAN BEE JOURNAL for one year, will be clubbed for \$1.25.

We will Present Webster's Dictionary (pocket edition), and send it by mail, postpaid, for two subscribers with \$2. It is always useful to have a dictionary at hand to decide as to the spelling of words, and to determine their meaning.

Sample Copies of the BEE JOURNAL will be sent FREE upon application. Any one intending to get up a club can have sample copies sent to the persons they desire to interview, by sending the names to this office, or we will send them all to the agent.

The Western World Guide and Hand-Book of Useful Information, contains the greatest amount of useful information ever put together in such a cheap form. The printing, paper, and binding are excellent, and the book is well worth a dollar. To any one sending us two new subscribers besides his own, with \$3.00, for one year, we will present a copy of this valuable book.

Yucca Brushes are employed for removing bees from the combs. They are a soft, vegetable fiber, and do not irritate the bees. As each separate fiber extends the whole length of the handle as well as the brush, they are almost indestructible. When they become sticky with honey, they can be washed, and when dry, are as good as ever. The low price at which they are sold, enables any bee-keeper to have six or more of them, so as to always have one handy. We can supply them at 5 cents each, or 50 cents a dozen; if sent by mail, add 1 cent each for postage.

Some Additions to our Catalogue.—ENAMELED CLOTH, for covering frames, price per yard, 45 inches wide, 20 cents; if a whole piece of 12 yards is taken, \$2.25; 10 pieces, \$20.00; if ordered by mail, send 15 cents per yard extra for postage.

Money Orders can now be obtained at the Post Offices at reduced rates. Five dollars and under costs now only 5 cents. As these are absolutely safe, it will pay to get them instead of the Postal Notes which are payable to any one who presents them, and are in no way safe.

Union Convention at Chicago.—The North American Bee-Keepers' Society and the Northwestern Bee-Keepers' Society will meet in joint convention in Chicago, Ills., on Wednesday, Thursday and Friday, November 9, 10 and 11, 1887. The Secretary's notice will be issued soon—naming the place of meeting and other particulars.

By Using the Binder made expressly for this BEE JOURNAL, all can have them bound and ready for examination every day in the year. We have reduced the price to 60 cents, postpaid. Subscription for one year and the binder for \$1.50.

Do you Want a Farm Account Book? We have a few left, and make you a very tempting offer. It contains 166 pages, is printed on writing paper, ruled and bound, and the price is \$3. We will club it and the Weekly BEE JOURNAL for a year and give you both for \$2. If you want it sent by mail, add 20 cents for postage.

Colored Posters for putting up over honey exhibits at Fairs are quite attractive, as well as useful. We have prepared some for the BEE JOURNAL, and will send two or more free of cost to any one who will use them, and try to get up a club.

E. Duncan Sniffen, Advertising Agent, 3 Park Row, New York, inserts advertisements in all first-class Newspapers and Magazines with more promptness and at lower prices than can be obtained elsewhere. He gives special attention to writing and setting up advertisements in the most attractive manner, and guarantees entire satisfaction. In all his dealings, he is honorable and prompt. Send for his Catalogue of first-class advertising mediums. Mailed free. 52A40t

Red Labels for one-pound pails of honey, size 3x4 1/4 inches.—We have now gotten up a lot of these Labels, and can supply them at the following prices: 100 for \$1.00; 250 for \$1.50; 500 for \$2.00; 1,000 for \$3.00; all with name and address of apiarist printed on them—by mail, postpaid.

Medley of American Bee-Keepers.—I have a few left of this Medley, and any one who desires to look upon the faces of 130 of the principal apiarists of America—dead as well as living—should send \$1.00, at once, for a copy, to

E. O. TUTTLE, Charlotte, Vt.

Advertisements.

WANTED.—A young man for 3 months, who has handled bees. Write price, experience, &c. Reference given and required. W. L. COGGSHALL, West Groton, N. Y. 24A1t

BEAUTIFUL.

ALL-IN-ONE-PIECE Sections, smooth inside and out. Comb Foundation, Alsike Clover Seed, and everything needed in the apiary. Send for free price list, and samples of Sections and Foundation.

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BELL BRANCH, Wayne Co., MICH.
10Et Near Detroit.

FOR SALE CHEAP.—One GIVEN'S FOUNDATION PRESS and FIXTURES complete. Nearly new, and in good order. Address, **W. C. CUMMINGS,** BUSHNELL, ILL. 24A2t

DR. FOOTE'S HAND-BOOK OF HEALTH,

HINTS AND READY RECIPES.

is the title of a very valuable book that gives a great amount of information, of the utmost importance to Everybody, concerning their daily habits of Eating, Drinking, Dressing, Sleeping, Bathing, Working, etc.

IT TELLS ABOUT

What to Eat, How to Eat it, Things to Do, Things to Avoid, Perils of Summer, How to Breathe, Overheating Houses, Ventilation, Influence of Plants, Occupation for Invalids, Superfluous Hair, Restoring the Drowned, Preventing Near-Sight- edness.	Parasites of the Skin, Bathing—Best way, Lungs & Lung Diseases, How to Avoid them, Clothing—what to Wear, How much to Wear, Contagious Diseases, How to Avoid them, Exercise, Care of Teeth, After-Dinner Naps, Headache, cause & cure, Malarial Affections, Croup—to Prevent.
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IT TELLS HOW TO CURE

Black Eyes, Bolls, Burns, Chills, Cold Feet, Corns, Coughs, Cholera, Diarrhoea, Diphtheria, Dysentery, Dandruff, Dyspepsia, Ear Ache, Felons, Fetid Feet, Freckles, Headache, Hiccough, Hives, Hoarseness, Itching, Inflamed Breasts, Ivy Poisoning, Moles, Pimples, Piles, Rheumatism, Ringworm, Snoring, Stammering, Sore Eyes, Sore Mouth, Sore Nipples, Sore Throat, Sun-stroke, Stings and Insect Bites, Sweating Feet, Toothache, Ulcers, Warts, Whooping Cough, Worms in Children.

Price only 25 Cents. Sent by Mail, post-paid.

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WANTED.—Five, 10 or 20 young Italian Queens, before July 1st; may be sent as soon as laying—pay on delivery. Who bids? Reference, First National Bank of Groton, N. Y. **W. L. COGGSHALL,** WEST GROTON, N. Y. 24A1t

BEES for SALE, Cheap.

100 Colonies of American-reared Italian Bees, best strain, strong, and in 10-frame wired Simplicity hives; for sale CHEAP. Address, **Z. A. CLARK,** 8EtF ARKADDELPHIA, ARK.

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WE make a specialty of the manufacture of DOVE-TAILED SECTIONS of the White Poplar, the whitest and best wood for the purpose. We make all styles and sizes, but recommend the Side-Opening Sections as superior to any other. The great accuracy and fine finish of our Sections are the admiration of everybody. Sample sent Price-List of Supplies free.

Address, **DR. G. L. TINKER,** 8EtF NEW PHILADELPHIA, O.

Wooden Pails for Honey!

WE can furnish regular Wooden Water-Pails—well painted on the outside, and with 3 iron hoops and a tight-fitting wood cover, at \$2.25 per dozen. They will hold 25 lbs. of honey, and when empty, can be utilized for use as an ordinary household pail.

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Successors to A. E. Manum, Bristol, Vt.

MANUFACTURERS of the BRISTOL Bee-Hive, the Standard Hive of Vermont.

SECTION HONEY BOXES,

made from white poplar, (the best timber in the world for honey-boxes), Clamps, and a Wood Thumb-Screw for Clamps. Separators and Wood Sides. **FLIGHTING GLUERS** Shipping-Crates, Bee-Escapes, Bee-Feeders, and

MANUM'S BEE-SMOKERS,

all made of the best material and in a workmanlike manner. Send stamp for Sample SECTION and Price-List. 2E12t

THE BRITISH BEE JOURNAL AND BEE-KEEPER'S ADVISER.

IS published every week, at 10s. 10d. per annum. It contains the best practical information for the apiarist. It is edited by Thomas Wm. Cowan, F.G.S., F.R.M.S., etc., and published by John Huckle, King's Langley, Herts, England.

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A Talk about some of the Implements, Plans and Practices of a Bee-keeper of 25 years' Experience, who has for 8 years made the Production of Honey his Exclusive Business.

BY **DR. C. C. MILLER.**

Price, 75 cents, by mail. This is a new work of about 114 pages, well-printed and nicely bound in cloth. Address,

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Dadant's Foundation Factory, wholesale and retail. See advertisement in another column.

FOR SALE!

1,000 to 5,000 Surplus Honey Crates, all painted and filled with 28 one-piece Sections, 7 to the foot. Will fit 8-frame Langstroth hive, or Heddon's Langstroth hive. The best CASE ever in use. Especially adapted for Tiering-Up. In lots of 5, 40 cents each. PRICE-List free.

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WOULD respectfully call the attention of all who use Foundation, to the fact that he has written, published, and now offers for sale a neat little book of 45 pages, entitled

"THE PRODUCTION OF COMB HONEY,"

in which, among other things, is made as clear as possible the question of when, where and how to use Foundation. When empty combs are preferable. When the bees should be allowed to build their own combs. How to prevent the building of drone-comb, etc., etc., etc.

The price of the Book is only 25 cents, and the knowledge gained from its perusal will enable its possessor to save more than the price of the book, in foundation, upon each swarm saved; and secure more honey into the bargain. Don't wait until the swarming season is over, but send for the book NOW—and be ready to test, this season, the plans and methods it advises. 23AtF

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ITALIAN Queens by return mail: Tested, \$1; Untested, 75 cts. Two-frame Nuclei, \$1.50; 3-frame, \$2. BEES by lb., 75 cts. 21AtF **GEO. STUCKMAN, Nappanee, Ind.**

EXCELSIOR HONEY EXTRACTORS

In answer to frequent inquiries for Extractors carrying 3 and 4 Langstroth frames, we have concluded to adopt these two new sizes. The 3 frame basket is in a can of the same size and style as the 2 frame. The 4 frame basket is in the larger can, with the cone or metal standard for the basket to revolve upon, leaving room underneath the basket for 75 or 80 lbs. of honey. It will be complete, with covers, and in every way identical, except in size, with the \$16.00 Extractor, 13x20, which is intended for any size of frame.

Excepting with the \$8.00 Extractors, all the different styles have strainers over the canal leading to the honey gate, and movable sides in the Comb Baskets. The \$8.00 and \$10.00 Extractors have no covers.

For 2 American frames, 13x13 inches.....	\$8 00
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In use 30 years. The only successful remedy for Nervous Debility, Vital Weakness, and Prostration, from over-work or other causes. \$1 per vial, or 5 vials and large vial powder, for \$5. SOLD BY DRUGGISTS, or sent postpaid on receipt of price.—Humphreys' Medicine Co., 169 Fulton St., N. Y. 16A12t

Send 75 Cents for my New Book—"A Year among the Bees;" 114 pages, cloth bound. Address, **DR. C. C. MILLER,** 20AtF MARENGO, ILLS.

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THESE Pails are made of the best quality of clear flint glass, with a bail and a metal top and cover. When filled with honey, the attractive appearance of these pails cannot be equalled by any other style of package. They can be used for household purposes by consumers, after the honey is removed, or they can be returned to and re-filled by the apiarist.

Prices are as follows:

To hold 1 pound of honey, per dozen,	\$1.00
" 2 pounds "	2.00
" 3 "	3.50

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ITALIAN Bees and Queens for sale.—Untested Queens, 75 cents; 8 for \$4.00. Send for Circular, Free.—**JOHN NEBEL & SON,** High Hill, Mo. 23AtF

ARMSTRONG'S New Reversible Hive.

The cheapest, simplest and most practical Hive ever offered to the public.

H. D. Cutting, of Clinton, Mich., says:—"Let me congratulate you on having such a good hive; your 'reversible' section-case is perfection itself."

Sample Hive, complete and painted, \$2.50.

Send your name and post-office address, plainly written on a postal card, and receive our 32-page Illustrated Catalogue, free.

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BEE-KEEPERS—read and save Money. Sections, Crates, Frames, Foundation, Hives, etc. Sections, \$3.50 per 1,000. Send for Price-List. **C. MATHEWS,** 23AtF IMLAY CITY, MICH.

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12 Inch, Price, \$30.00.

☛ We can ship them immediately.

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Alley's Queens!

Warranted, \$1; Select, \$1.25; Tested, \$1.50

AMERICAN APICULTURIST 1 year and Select Queen, \$1.50. How to Rear Queens (300 pages, 100 Illustrations, bound in cloth), by mail, and one Tested Queen, \$2. How to Get Comb Honey, 20 pages, 10 cents. Address, **HENRY ALLEY,** 21AtF WENHAM, Essex Co., MASS.

BEES! 300 COLONIES ITALIANS

READY for spring delivery at 60 cts. to \$1.00 per pound, according to time. Choice Queens and Brood cheaper in proportion. Also ADJUSTABLE HONEY-CASE, and other Supplies. Circular free. **OLIVER TOSTER,** 11AtF Mt. Vernon, Linn Co., Iowa

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We can supply this seed **POST-PAID** at the following prices: One-half ounce, 50 cents; 1 ounce, \$1; 2 ounces, \$1.50; 4 ounces, \$2; 1/2 pound, \$3; 1 pound, \$5. One pound of seed is sufficient for half an acre, if properly thinned out and re-set.

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